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# USSR Report

HUMAN RESOURCES

No. 48

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## LABOR

### UZBEK PARTY SECRETARY ON LABOR, ENERGY RESOURCES

Moscow EKONOMICHESKAYA GAZETA in Russian No 46, Nov 81 p 5

[Article by I.G. Anisimkin, secretary of the Uzbek Communist Party Central Committee: "Commissioning All Potential"]

[Text] The Soviet country has reached the end of the first year of the 11th Five-Year Plan. The Uzbek party organization and the republic's working people are channeling their efforts toward the successful fulfillment of the 1981 program. In 9 months industry sold R222 million worth of products over and above the quota. Manufacture thereof increased 7 percent compared with the corresponding period of last year. Labor productivity grew 4 percent. However, our achievements in all areas of economic activity could and should have been far more impressive; for this we have all possibilities and as yet unutilized resources.

#### Making Rational Use of Labor Resources

The Uzbek Communist Party Central Committee attaches exceptional importance to the rational use of labor resources. It is well known that the natural increase in the population, mainly the rural population living in villages and in rayon centers and small towns, is high in the republic. In addition, considerable numbers of the able-bodied population are constantly being released thanks to the increasing mechanization of agriculture. And a surplus of the able-bodied population not employed in production has been observed in a number of the republic's densely populated areas. At the same time it is in these areas that industrial development is not proceeding quickly enough.

Following a decision of the Uzbek Communist Party Central Committee Bureau, branches of major production associations and enterprises are now being created in the small towns and rural communities. Practice has convincingly corroborated the correctness of this approach. The creation of branches is enabling us to solve an entire complex of both economic and sociopolitical problems.

The production associations and industrial enterprises will be able to solve today's acute question of their staffing in full with stable personnel. The population of the small towns and rural communities will be able to work in production without having to leave its own areas, considerably improve its material well-being and, what is very important, enhance its cultural level on a firm economic basis.



Approximately 290 branches and shops of industrial enterprises are currently operating successfully in the republic.

An extensive network of branches has been created by enterprises of light, food and local industry and electrical engineering and machine building. The branches of the "Soyuzmashkhlopkovodstroy," "Sredazelektroapparat," "Sredazkabel'" and "Krasnaya zarya" Garment production and industrial associations are distinguished by a high standard of production. In the last 5-year period the republic Ministry of Light Industry alone created 67 branches in various regions which manufactured more than R100 million worth of products.

It should be emphasized in this connection that the creation of branches is not an easy matter. A certain boldness, a readiness to take on additional cares and responsibility, socialist enterprise and practical determination are required of the managers. Certain leaders, unfortunately, are still displaying sluggishness.

The party authorities are performing purposeful work with the managers, revealing the prospects of the development of the works, suggesting paths and methods of work and helping solve practical questions. All the work being done is dictated by the fact that the current 5-year plan intends a considerable increase in the number of enterprise branches and shops in the republic, which will enable us to double the manufacture of consumer goods, for example.

All the republic's ministries and departments have now been set concrete quotas for the development of the said works and their location in all oblasts, primarily in the Karakalpakskaya ASSR and Dzhizakskaya, Kashkadar'inskaya, Syrkhandar'inskaya and Khorezmskaya oblasts.

Daily supervision of the organization of the branches, the timely development of planning-estimates documents for them and the training of worker and engineering-technical personnel at the head enterprises for the speediest assimilation of the newly introduced production capacity in the small towns and rural regions has been established. We see in this broad prospects for industrial development for many years to come.

#### Making Work More Attractive

Solution of the problem of a reduction in manual labor is particularly important. It is at the center of the attention of all the republic's party organizations. At the start of the last 5-year plan almost one-half of all workers in industry was employed in manual labor. The situation has now improved somewhat, and more extensive use is being made of means of the automation and mechanization of production.

More than 40,000 measures of scientific-technical progress were introduced and over 180 transfer and comprehensively automated lines were commissioned in the republic in the 10th Five-Year Plan. The work done on the retooling of production made it possible to release and channel into other sectors approximately 35,000 persons and to save over R450 million.

But we regard the results that have been achieved merely as the start of a great deal of complex work. An analysis of the economic activity of the industrial enterprises shows that there are still considerable reserves.

There is also another aspect of the problem--making work more attractive and meaningful. It should be mentioned that both economic and social aspects are closely interconnected here. Practice confirms that where work is unattractive and monotonous, personnel turnover is high and breakdowns in the organization of production are more frequent, which, naturally, has a negative effect on the economic indicators. It is for this reason that all our industrial enterprises have formulated a set of measures for the acceleration of scientific-technical progress and the replacement of manual labor with mechanized labor. Implementation of the measures is being strictly monitored by the party organizations locally. The leadership of all work on the mechanization of manual labor has been entrusted to special commissions headed by enterprise chief engineers.

Much is also being done at the republic's enterprises on the assimilation of progressive production processes, the use of less expensive and stronger material in the manufacture of products and the assimilation of new products. At the same time it is in this field that a great deal of complex work has to be done. We refer primarily to an increase in the efficiency of the use of new equipment. The experience of such progressive enterprises as the Samarkand Elevator-Building, Almalyk Chemical and Tashkent Porcelain plants and the Tashkent Aviation Association imeni V.P. Chkalov convinces us that success is achieved by the collectives which attach the most serious significance to this question and adopt a comprehensive approach to the solution of organizational, technical, economic and social problems in their development.

There are also, however, enterprises where the duty factor of highly efficient modern equipment is still low. The Bukhara Textile Works, for example, is a technically highly equipped enterprise, but it is not producing at full efficiency. And the main reasons for this are the inadequate use of new equipment and the insufficiently high level of the workers' professional skill.

In general, we try to attach particular significance to the training of highly skilled personnel. In the 11th Five-Year Plan we have scheduled a wide-ranging program of the development of the network of vocational-technical schools. We plan to create tekhnikums and branches of technical VUZ's in the industrially developed cities like Angren, Akhangaran, Almalyk, Andizhan, Navoi, Nukus and Chirchik, that is, where there are many working young people.

#### The Highest Demands--on Quality

The question of the training of highly skilled personnel is, in turn, directly connected with problems of a rise in product quality. Today the "high quality" concept includes not only the durability, reliability and aesthetic appearance of the products but also their social significance. Good products put man in a good mood, help him in his work and adorn his life. That is why the highest demands must be made of product quality.

As L.I. Brezhnev observed at the 26th party congress, the level of the demands made on product quality should be very high. Corresponding to the best world and domestic models--we cannot and must not agree to anything less. It is necessary to accustom ourselves to and strive for this, resolutely rejecting everything that is obsolete, outdated and devalued by life itself.

The 10th Five-Year Plan was a breakthrough period in the struggle for high product quality. In recent years in the republic there has been a considerable rise in the technical level and an improvement in the quality of the products manufactured by the industrial enterprises. Uzbekistan currently manufactures approximately 2,000 products bearing the official Symbol of Quality.

Products of our leading enterprises--the "Uzbekkhimmash," Margilan "Atlas" Association, Almalyk Furniture Factory, Uzbek Refractory and Heat-Resistant Metal Works, the Samarkand Garment Production Association imeni 8 Marta and many others--are well known in our country and overseas. One out of every four products of Chirchik's industrial enterprises is manufactured with the Symbol of Quality. Much work to improve product quality is being performed at the Tashkent Tractor Plant. The so-called quality evaluations have become an effective form here.

The Uzbek Communist Party Central Committee and the party organizations locally are keeping this important area of work at the center of their attention. The Central Committee, for example, recently examined the question of a rise in the technical level and quality of products in the Uzbek SSR in 1981-1985. A decree was adopted which approves the socialist pledges of the Uzbek Refractory and Heat-Resistant Metal Works and the Samarkand Production Association imeni 8 Marta to enhance the technical level and quality of the manufactured products and increase the manufacture of products of the highest quality in the 11th Five-Year Plan. This valuable experience has already spread to many of the republic's enterprises. Measures are planned for an intensification of all work connected with a rise in product quality in all sectors.

It would probably be fitting to acknowledge here that the technical level of certain products does not always meet the consumers' requirements. Rural workers are expressing justified complaints to our machine builders for the low quality of certain machines, assemblies and units. The purchasers are far from always content with the products manufactured by certain enterprises of the republic's light, food and local industry.

Clothing, footwear and household-everyday commodities are still frequently manufactured which deviate from the standard models. Such goods, naturally, become shop-soiled on the store counters and in wholesale depot warehouses, are rejected and are relegated in grade, which leads to big economic losses. These problems were discussed this June at a republic party-economic activist meeting. Recommendations were adopted aimed at a sharp improvement in the quality of all manufactured products.

#### The Economy Will Be Economical

One further question--the struggle for economies and thrift. This struggle has assumed a nationwide character. Some 357 million kilowatt-hours of power, 617,000 Gigacalories of thermal energy, 45,000 tons of standard fuel and a considerable quantity of metal, cement, timber and other material resources were saved in the first 9 months of the first year of the 11th Five-Year Plan in Uzbekistan.

Hundreds of thousands of progressive workers, engineering-technical personnel and scientific-technical society and all-union society of inventors and efficiency



experts members have joined actively in the campaign for economies and thrift. But it is not everywhere that due attention has yet been paid to this important matter. An analysis of the work being performed in the republic on economies shows that instances of the irrational use of raw material and intermediate products and an irresponsible attitude toward the preservation and use of material assets have not yet been eradicated.

The party organizations locally are stepping up supervision of the economic activity of the administration, mobilizing the broad working people's masses and enlisting the mass information and propaganda media in work on economies and thrift and are holding managers and each communist strictly to account for extravagance and an improprietary attitude toward national wealth.

At the same time it would be wrong to conceive of an increase in production efficiency as a whole merely as implementation of the corresponding measures outlined from above. An important part is played here by the initiative of the working people themselves, and the party organizations are endeavoring to consolidate the labor enthusiasm of the time of the preparation and proceedings of the 26th CPSU Congress in order on this basis to secure the fulfillment and overfulfillment of the plan of the first year and subsequent years of the 5-year plan.

Fifteen progressive industrial enterprises and transport organizations have come out with a valuable initiative in the republic for the ahead-of-schedule fulfillment and overfulfillment of personal quotas in the 11th Five-Year Plan. They include M. Abdullayeva, winder at the Namangan Silk Cloth Works, V. Bochkov, lathe hand at the Tashkent "Pod'yemnik" Plant, D. Mamatkulov, driver of the Shurchinskoye Motor Transport Enterprise No 77, and others. The Uzbek Communist Party Central Committee has supported this initiative, and it has now become widespread. Over 10,000 industrial workers have already fulfilled personal plan quotas for 1981 ahead of schedule.

Big scope for initiative is contained in the development of the brigade forms of the organization and stimulation of labor. Hundreds of brigades working on a single order have been created at the republic's industrial enterprises. Good results in the introduction of brigade forms of labor have been achieved in the "Elektroterm" Association and at the "Tashsel'mash" and "Kompressor" plants.

The task now is to extensively and persistently introduce the experience of the foremost collectives at all enterprises.

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## LABOR

### UTILIZATION OF LABOR, CAPITAL IN KAZAKHSTAN EXAMINED

Alma-Ata IZVESTIYA AKADEMII NAUK KAZAKHSKOY SSR: SERIYA OBSHCHESTVENNYKH NAUK  
in Russian No 5, Sep-Oct 87 pp 81-86

[Article by M. M. Munatayev and M. K. Mukanova: "Increasing the Equipment Shift Coefficient"]

[Text] In commenting on the tremendous role that the economizing of time saves in collective production, Marx wrote that every economy achieved by society is, in the final analysis, reduced to a saving of time, and he called the law of time saving the first economic law in socialist society.

At the present-day stage in the development of the economy, a task that is especially important is the task of the most complete use of the existing equipment. The material wealth of society in the final analysis is determined by the size of the time fund that is used in operating the equipment and by the level of that equipment's productivity. With the present-day scope of production, the importance of each hour of equipment operation is extremely great. Let us consider some figures. At the present time, in order to produce as much petroleum, coal, and steel as was produced in 1913, it takes, respectively, 6.8, 14.5, and 10.3 days, and for the production of electrical energy and mineral fertilizers at the 1913 level, respectively somewhat more than 15 and approximately 8 hours. Time has never before been so saturated as it is right now. At the 16th Congress of Trade Unions L. I. Brezhnev cited eloquent figures. In particular, the loss of just one minute of work time on the scale of the country's national economy is equivalent to the loss of the results of the day's labor of 200,000 workers.

The achievements of the scientific-technical revolution, combined with the advantages of socialism, have immeasurably increased the "price" of work time and, consequently, the responsibility borne by each collective for its efficient use.

In the Eleventh Five-Year Plan a large amount of attention is being devoted to increasing the productive work time of the equipment, to increasing its shift-use coefficient. And this is not accidental. Among the indicators of use of fixed assets, the equipment shift coefficient occupies a special place, since it reflects the duration of time when the tools of labor are loaded over the 24-hour period and is directly linked with the most important indicators of the enterprises' work effectiveness. This indicator exerts a direct effect upon the actual effectiveness of the capital investments. The one-time expenditures for purchase of new

technology are paid back by an increase in the total amount of profit within the normative deadlines, provided the actual shift coefficient for the operation of that technology is not below the coefficient that was stipulated during the planning process.

The shift coefficient for the operation of machinery and equipment exerts an influence upon the formation of the enterprises' needs for the material, financial, and labor resources that are needed for conducting the economic activity.

The level to which each production subdivision is provided with equipment, manpower, and working capital depends upon the number of shifts during which the production process is carried out. The higher the shift-work coefficient, the smaller the number of machine tools and equipment required to fulfill the production program.

The vital importance of increasing the shift-work coefficient of the equipment was pointed out by the CPSU Central Committee. In the Report to the 26th CPSU Congress, L. I. Brezhnev said, "The reduction of idle time, the increase in the shift coefficient, the creation of technological schemes that save energy and materials -- those are the areas where it will be necessary to concentrate our efforts"<sup>1</sup>.

In economic literature, computations have been cited which indicate that, with the changeover of machine-building enterprises to two-shift operation, it is possible to achieve on the existing production areas an increase in the production of output of approximately 20 percent. The production of this amount of output requires 2.5 times more capital expenditures for the construction of new enterprises than are required with the more intensive use of the production capacities.

Data that was published recently indicates that an increase, over a 7-8 year period, of the shift coefficient to 1.6-1.8, the percentage of machine time to 60 percent, and the use of equipment capacities to 40 percent as a result of carrying out a number of measures will raise in machine-building the level of use of the equipment and will increase the production of output by 1.5-2 times with almost no additional capital investments<sup>2</sup>.

As a result of the steps being taken by the party and government to improve the use of the production potential that has been created in our country, the whole-shift and intrashift idle-time periods of equipment are being reduced and the duration of the effective operation of the technology is increasing. For example, in the republic's machine-building during the period from 1971 through 1980 the shift coefficient for operation of casting equipment increased from 1.55 to 1.65; and electrical welding machines, from 1.32 to 1.38. The intrashift idle-time periods for those machines during the same period dropped, respectively, from 8.4 to 12.8 percent and from 10 to 11.8 percent [sic].

Nevertheless the equipment operating time that has developed does not satisfy the requirements of intensification of production. At enterprises of machine-building and metal-working, the rates of increase in the shift coefficient have been low. As a whole for the total amount of metal-working equipment in the republic, the shift coefficient constituted 1.29 in 1971, and 1.31 in 1980, that is, changed only very insignificantly. For forge and press machines it dropped from 1.4 to 1.35.

As was indicated by a one-time 24-hour observation of the use of equipment which was carried out by state statistics agencies at 55 machine-building enterprises on 15 May 1980, 4164 units of equipment were not operating during the 24-hour period in the basic production; they included 2906 metal-cutting machine tools, 708 forge and press machine, 218 pieces of casting equipment, and 332 electrical-welding machines.

Each minute of equipment idle time causes tangible damage to the national economy. It is well known, for example, that, during the year, approximately 4.6 rubles of output is produced for each ruble of value of operating machinery and equipment in the republic's machine-building and metal-working. An increase in the return by only one percent is equivalent to an additional increase in output with a total value of more than 3.2 billion rubles.

The insufficiently complete use, and in a number of instances the drop in the level of whole-day and whole-shift use of the metal-working equipment is explained by many factors, but the one that is becoming increasingly important among them is the greater and greater shortage of manpower. For example, at the republic's machine-building enterprises, more than 30 percent of the total equipment idle-time periods occurred as a result of the fact that they were not manned adequately. In the machine-building and metal-working of Kazakhstan one observes a reduction in the number of workers with respect to the amount of installed equipment: in 1980 this indicator dropped by a factor of 1.27 as compared with 1971.

This tendency, in principle, is completely natural: the increase in productivity of technology should always be accompanied by the freeing of a definite amount of manpower. At such time the enterprise, as it were, is supplemented with additional manpower, since the workers who have been freed as a result of the introduction of the new technology fill in the "empty" work sites, thus raising the level of whole-shift and whole-day use. But the drop in the shift-use coefficient and day-use coefficient for the metal-working equipment in the machine-building of Kazakhstan means that the increase in labor productivity and the productivity capability of the technology is not compensating for the created shortage in manpower as a result of the unproportional increase in the number of work sites and the number of workers. During the past five years the amount of installed metal-working equipment at the republic's enterprises of machine-building and metal-working increased by more than 40 percent, but the number of workers increased by only 10 percent.

The reason for the so-called manpower shortage is the slow reorganization of the reproduction of fixed assets in conformity with the requirements of intensification. The accumulation of fixed assets is accompanied by the formation of new work sites with slow rates of replacement of the obsolete tools of labor and freeing of the workers from the existing production. During the past five-year plan, in the republic's industry, with an average annual rate of activation of new fixed assets of 9-10 percent, and withdrawal of obsolete tools of labor of 1.5 percent, the number of the relatively freed workers as a result of the introduction of new technology dropped from 12,300 persons in 1975 to 10,400 persons in 1979.

One of the basic reasons for the low shift coefficient for equipment operation is the nonconformity of the technological structure of the equipment to the structure and labor-intensity of the enterprises' production program. This nonconformity,



which makes it impossible for the enterprise in an even manner over a period of time to load the fixed assets with the fulfillment of the production program, is intensified as a result of the increasing volume of operations to assimilate new types of output. In the republic the series production of new types of industrial output has increased from 35 items in 1970 to 127 items in 1979, that is, by a factor of 3.6.

As a consequence of the continuous growth of highly productive equipment, there have also arisen definite disproportions in the productive force of the total pool of machinery and equipment. It is necessary to improve the existing practice of loading the tools of labor, with a consideration not only of branch, but also inter-branch territorial cooperation. For purposes of increasing the shift coefficient it is necessary to improve the structure of the pool of metal-working equipment by reducing the production of general-purpose machine tools and machinery and increasing the production of highly productive special and combined machine tools, progressive forge and press equipment and automatic lines and complexes, to which special attention was devoted in the Basic Directions in the Economic and Social Development of the USSR for 1981-1985 and for the Period Until 1990<sup>3</sup>.

An increase in the equipment operating time is also achieved by eliminating the bottlenecks in production (nonconformity of capacities among the various technological groups of equipment; insufficiency of billet base; etc.), the improvement of material-technical supply, which makes it possible to eliminate the interruptions in supplying production with raw and other materials, components, etc.

The mechanization of subsidiary production is an important way to raise the shift coefficient in basic production and to free manpower. Computations have indicated that in subsidiary production the equipment shift coefficient is 15-20 percent lower than in the basic production. If one raises the level of whole-shift loading of the equipment in subsidiary production to the level of its load in the basic production, the overall value of the shift coefficient will rise by 2-3 percent.

An analysis of the reasons for equipment idle time in the republic's industry has shown that approximately 20-25 percent of the idle time occurs as a result of repairing the equipment.

Practically speaking, every machine-building enterprise is engaged in the repairing of equipment. The low concentration of repair operations is accompanied by the weak mechanization of labor, the high labor-intensity of the operations, and the low quality of the repair. The service life of the equipment that has been repaired in the enterprises' shop proves to be from one-third to one-half that of the tools of labor that have undergone capital repair at specialized enterprises. The existing practice of repairing the equipment at the plants by the in-house method leads to a dispersion of technology and to a large number of workers employed there. Therefore, for purposes of raising the shift coefficient for equipment operation, it is necessary to carry out the specialization of the machine-building enterprises, including the specialization of the subsidiary production entities, and the concentration and specialization of repair production.



The centralized repair of the most widespread types of metal-working equipment, the manufacture of spare parts for it, and the restoration of worn-out parts will be concentrated at the specialized plant. This requires the planned creation of an exchange fund of units, assemblies, and machine tools of various standard models. The expansion of the scale of the specialized plants will make it possible to close down many small-scale machine-repair shops and repair bases at enterprises and to free a large amount of production areas, equipment, as well as a large number of workers.

The production of replaceable units and parts for machine-building in our country (including Kazakhstan) is not yet sufficiently developed. In the overall value of the output of machine-tool-building, their share is 1.5-2 percent (in the United States it is 12 percent)<sup>4</sup>.

Large opportunities for mechanizing the subsidiary production will appear as a result of the creation in the republic of industrial centers. An industrial center is the total set of enterprises of various departments and ministries having production projects that are used in common. The financing and regulation of these projects that are common to the industrial centers must be carried out jointly by the group of enterprises that form the industrial center.

The projects which can be common ones for the industrial center are, first of all, the services in the subsidiary and service production entities: the boiler room for supplying heat and steam to all enterprises in the industrial center; transformer substations; purification and water-tower structures; radio and telephone centers; computer and training centers; warehouses; garages; etc. The creation of such projects will make it possible to decrease the expenditures for capital investments, and to mechanize the production processes and free a considerable number of workers for basic production.

The existence at enterprises of machine tools and machinery which are unnecessary for the normal production process -- machine tools and machinery which are in the overwhelming majority uneconomical and obsolescent -- is one of the reasons for the drop in the shift coefficient and is one of the factors inhibiting the renovation of the fixed assets, the increase in return on investments, and the increase in profitability and labor productivity.

In order to eliminate the excessive tools of labor, one must first study the opportunities for eliminating them on the basis of attracting an additional number of machine-tool operators from among the persons who were previously employed in the subsidiary operations, or by developing a process of servicing several machine tools and combining occupations. But if this method is impossible, it is necessary to carry out the partial freeing of the excessive equipment -- primarily the equipment with low productivity -- and the conversion of the thus-freed machine-tool operators to a double-shift operating mode. In other words, it will be necessary to take a certain number of machine-tool operators who previously worked on new and obsolete machine tools of the same time during a single shift, and redistribute them to a work load that involves only modern equipment on two shifts. This will result in an increase in the shift coefficient for the entire pool of machine tools.

The freeing of excessive equipment, an act that represents an absolutely necessary prerequisite for converting some of the machine-tool operators to double-shift operation, does not mean any reduction in the enterprise's production capabilities. On the contrary, the production of output will increase as a result of concentrating the personnel in the use of modern technology. As for the considerable amount of metal-working equipment which is to be taken out of operation and which is economically ineffective at the particular enterprise (because of its low productivity, partial loss of reliability and precision, etc.), it can be effectively used in other branches or production entities where the requirements for such parameters are less rigid, including agriculture, repair shops, garages, etc. The broken-down and obsolescent machine tools and assemblies should be written off.

The increase in the shift coefficient by means of freeing the fixed assets which are excessive with the particular number of machine-tool operators is a requirement of the present-day stage in the development of the economy. This method of increasing the load placed upon the tools of labor will make it possible to accelerate the resolution of a number of tasks of the social development of the worker collectives. The use of modern machine tools will require a rise in the special and general-educational level of a considerable number of the workers. Their labor will become more meaningful. The changeover to double-shift operation is accompanied by an increase in the workers' wages, which is assured as a result of the increase in the individual output when operating on more productive equipment.

Specialization and concentration of production exerts a large influence upon the use of the operational time fund. Whereas in the cutting-tool shops of the machine-building plants the time losses of the machine-tool equipment reach 60-70 percent, at the specialized cutting-tool plants they are only 10-15 percent<sup>5</sup>.

At the present time many enterprises have cutting-tool, machine-repair, and casting shops. But the centralized production of cutting tools for the country as a whole comes to approximately 20 percent; castings, 4-5 percent; and forgings, 3 percent. The productivity of this kind of manufacture of them is 2-3 times higher than at unspecialized enterprises, and the quality of the output is also better.

It is easy to imagine what a colossal saving of expenditures of live labor could be achieved if it were possible to raise significantly the level of development of the specialized production entities, because the subsidiary processes employ half the workers! A tremendous pool of machine tools has been scattered among hundreds of repair enterprises and large-scale and small-scale shops not only in the industrial branches, but also in the nonindustrial ones (on sovkhozes, in construction, transportation, etc.), where that pool is used to a much smaller extent than in machine-building.

People have written for a long time about the low level of specialized production of cutting tools, forgings, and castings. But in the practical situation that problem is still being resolved slowly. For a certain period of time the work in this direction became more lively -- new enterprises were built and activated, and they increased somewhat the percentage of the specialized production entities, but then there followed once again a lagging behind the growing need for this kind of output. Machine-repair and cutting-tool shops are continuing to be constructed at almost every new plant, and the network of various kinds of small-scale repair shops is broadening.

The development of the specialized production of cutting tools, forgings, and castings is a complicated problem. But it must be resolved, because without it the reduction of the number of workers in subsidiary production entities and shops is impossible.

It is necessary to expand the construction of large-scale specialized plants for the production of cutting tools, forgings, and castings, especially those in general use. In addition, it is important to use the advantages that are opened up as a result of the organization of industrial associations. If the association includes 3-5 enterprises or more, one can limit oneself to one or two subsidiary shops. Even in this instance the state will derive a large benefit. An association that can serve as an example is the LOMO Leningrad Association, where the production of cutting tools and the machine-repair operations constitute a single effectively operating management.

#### FOOTNOTES

1. PRAVDA, 24 February 1981.
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3. PRAVDA, 5 March 1981.
4. PLANOVOYE KHOZYAYSTVO, No 11, 1968, p 25.
5. Zhdanov, A. I. Bereznoy, N. I., *Osnovnyye fondy i ekonomika promyshlennogo predpriyatiya* [Fixed Assets and the Economics of the Industrial Enterprise], Moscow, 1969, p 147.

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CSO: 1830/143

## LABOR

### UNDEREMPLOYMENT OF ENGINEERS PROBLEM IN KAZAKHSTAN

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[Article by G. Chumakova: "Paradoxes of Distribution"]

[Text] During his student years everybody considered Aleksey Lobanov to be a bright fellow: he distinguished himself in his studies, took part in the institute's learned society, and his diploma project, "The Electrical Power Supply of an Aluminum Plant," was one of the best. At the time of job allocations he was granted the right to choose the place of his future employment.

He joined a planning institute of Union jurisdiction (a requisition for an electrical engineer had been received from there), assuming that in such a solid institution there would be more prospects for professional growth. However, his hopes were not justified. During the first few days nobody paid any attention to him at all. Then they gave him some drafting work with which even a first-year student could probably have coped.

"A year went by, but everything remained the same," states Aleksey. "I tried to seek out and propose some interesting solutions, but they just waved me away: do what you're supposed to and let the boss do the thinking...."

And here now, after diligent attempts to engage in creative engineering work, he has been employed for a whole year already as a machine-tool fitter-adjuster at the Alma-Ata Heavy Machine-Building Plant.

Such stories are not exceptional. At this same heavy-machine-building plant there are 20 engineers who are sharing the same fate as Aleksey. At the Porshen' [Piston] Plant 25 persons with VUZ diplomas are wearing workers' uniforms. Moreover, also working at the Porshen' Plant as an electrical repair-man is a former fellow-classmate of Lobanov's, a graduate of the Alma-Ata Power-Engineering Institute, Yerbolat Tazhmuratov. Of course, one could chide the young specialists for perhaps not being very persistent or principled. But, you know, during the period just after graduation they needed some support and conditions for creative growth.

And if one looks around at various sectors as a whole, then one finds much more than just a hundred such situations. Thus, at the enterprises of the Kazakh SSR Ministry of Non-Ferrous Metallurgy last year workers' jobs were occupied by 906 specialists with a higher education, the republic's Ministry of the Meat and Dairy Industry had 169 such persons, while the Ministry of Power and Electrification had 584 VUZ graduates working in such positions.



So what is the matter here? Is it possible that industry no longer needs engineers? It turns out that this is not the case at all. Judging by the requisitions (i. e., job-vacancy listings), persons such as Aleksey Lobanov are in urgent demand at non-ferrous metallurgical enterprises, where his field of specialization, "The Electric Power Supply of Industrial Enterprises," is considered to be in acutely short supply. And there is probably no sector whose job requisitions would not include a substantial listing of engineering personnel in acutely short supply. However, the demands, as a rule, are satisfied every year by slightly more than half, and sometimes by only 30--40 percent. Many enterprises, for example, need machine-building specialists, but this republic does not even have one machine-building VUZ. One can imagine what a strict account Gosplan must keep on each graduate of polytechnical institutes of the corresponding specialization! And, nevertheless, they frequently handle the alumni of higher schools in an un-businesslike way, showing little concern that they should be utilized in accordance with their fields of specialization.

What quirks of fate cause a metallurgist to end up at an electrical engineering enterprise? You know, of course, that, in order to utilize him, he must be trained and retrained; this takes time and funds. And the most diverse specialists turn out to be in such strange "non-specialty" positions. At a plant manufacturing low-voltage apparatus one may encounter a garment-manufacturing technical engineer, for whom light-industrial enterprises are eagerly waiting, and even an engineer with a diploma in . . . chemical technology. Approximately a thousand specialists with diplomas, working in enterprises of the republic's meat and dairy industry, have a basic education which does not correspond to this sector. There are also many such lacks of correspondences in a number of other ministries.

But what is the reason for such overlapping with regard to personnel? There can scarcely be an unequivocal answer to this question. Manifesting itself, first of all, is the lack of sufficient attention paid to a recent graduate when the latter arrives at an enterprise by assignment. Professional dissatisfaction and the lack of prospects for growth often compel him to seek a more interesting position.

Also very important are the everyday and material conditions within which the newcomer finds himself. You know, he frequently is not even accorded dormitory housing and has to do the best he can in this respect. Last year 93 specialists were sent to enterprises of the republic's Ministry of Light Industry "without being accorded housing." It is not by chance that 189 young specialists left employment at the ministry's enterprises during this same period. Also too little suited to the prestige of an engineer is the rather low level of his salary. Granted that this factor is not always the determining one, still it does have an influence.

Nevertheless, the existing shortage of engineering personnel is conditioned not only by everyday and professional causes but, to a considerable degree, by miscalculations in the future planning of needs for specialists.

Since they do not know how or do not attempt to retain the creative young persons, the enterprises, in most cases, strive to make up for the outflow with the aid of requisitions aimed at acquiring newer and newer specialists. A consumer-like

attitude toward higher schools has, unfortunately, become the norm. But inasmuch as most of the republic's ministries have still not worked out a scientifically grounded method for requisitioning personnel, the forecasts coming in to the republic's Gosplan and to the Union ministries are often guesswork and at times even erroneous. Here are a few examples.

During the years 1978--1979 the KASSR Gosstroy increased its demands for architects. Student admissions were expanded. But when it came time to receive diplomas, Gosstroy sharply reduced its requisitions. An artificial over-production of personnel had occurred.

A similar situation took form with the field of specialization entitled "Economics and Organization of Electric-Power Engineering," for which the Ministry of Power and Electrification had increased its requisitions right up to 1980, amounting to 25 persons a year. Now it has sharply reduced its demands--to one-fifth of that amount. Now it turns out that the ministry's personnel staff members do not know where to put the graduates. And, you know, a new type of economist will be obtaining their diplomas four years from now. And not without detriment for the other engineering professions which are acutely needed by the national economy.

The mistakes made by sectorial planning are paid for, unfortunately, not by the departments involved but by the young persons who are entering upon their working careers. The chief of the personnel department of the republic's Ministry of Non-Ferrous Metallurgy, N. G. Subachev, complained to me about the fact that fields are providing surpluses (nine times more than what was requisitioned this year) of specialists on the economics and organization of the metallurgical industry and only 13 percent of the requisitioned labor specialists. Who is to blame? Nikolay Grigor'yevich shrugs his shoulders: try to analyze it. But the VUZ graduates have to look for job openings on their own....

The coordinated aim and precision of distributing alumni of higher schools also depend on territorial-geographical factors. It is difficult to explain, for example, why miners, electric-power engineers, and other graduates of Kazakhstan VUZ's are sent to work beyond the borders of this republic (last year alone there were 54 of them throughout the Ministry of Non-Ferrous Metallurgy alone), while, in exchange, the very same kinds of specialists are sent here from, let's say, Armenia. Such "visiting" youth are poorly retained at enterprises: during this past year out of an anticipated 28 graduates of the Yerevan Polytechnical Institute only seven arrived; of these four soon left work without permission, and the remaining three have persistently attempted to break loose. And several of the ones which we sent out are being attracted back to their native places.

But neither do the planners responsible for the exactness of the personnel demands have an easy task: you know, the standard list of jobs to be filled by specialists with a higher or secondary education has not been worked out in a scientific manner to this very day. As a result, a devaluation of a number of occupations has occurred: a job, let's say, has been listed as an engineering position but is frequently occupied by a technician or a practical worker. And, vice versa, work which is fully within the competence of a technician is being performed by an engineer, who is dreaming about more interesting work.

As far back as 1978 the USSR Council of Ministers entrusted the republican and Union ministries with the task of working out and presenting by the end of that year standardized job lists and other documents on which precise, error-free planning depend. However, the deadlines which were set have long since past, and the enterprises still do not have the necessary scientific methods or norms.

Is it surprising that the system of personnel requisitioning, which is being carried out, so to speak by "eyeballing," has led to a violation of the quantitative correlation between the engineering and the middle-level technical staff, which is very important for the life of any enterprise. It is well known that this correlation should have a ratio of 1 : 3. But what is it in fact? Let's take, for example, the republican Ministry of Motor Transport. Here this ratio does not stand up. And throughout the KaSSR Ministry of Agriculture there are not even two technical jobs for each engineering position.

It is understandable that the prestige of engineering professions does not depend solely on administrative edicts and instructions. However, order must be brought into the very complicated matter of planning and distributing highly qualified personnel. At present the various "steps" of this system are in the hands of various "bosses." The time has come, however, to unify the interests of the VUZ's, enterprises, and departments, to implement an integrated personnel policy on the scale of the country's entire engineering workshop. It is thought that the USSR State Committee for Science and Technology could become such an authoritative organ along with the USSR Gosplan. Nowadays, you know, the pace of introducing the advanced achievements of scientific thought and the embodiment of bold, technical ideas in highly effective, reliable machines and instruments, as well as technological lines, depend, in large part, precisely on the level of engineering work.

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## LABOR

### NATURAL PROCESS OF INTENSIFICATION OF MANPOWER REPRODUCTION

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[Article by K. Papenov, candidate of economic sciences]

[Text] In the investigation of questions of intensification of manpower reproduction, as well as of its reproduction in general, a systems approach is required. This is due to two basic factors. First, economic relations relating to manpower reproduction form a constituent part of the complex hierarchical system of production relations; in studying this problem, it is necessary to proceed from the developmental laws of the latter as a whole. Second, relations on manpower reproduction as such are not just an elementary mechanical combination of economic phenomena and processes but also a definite system (subsystem of production relations) which cannot be understood through the selection of one or another separate connection existing in it.

The realization of a systems approach to a subject of political-economic research presupposes, in our opinion, the conducting of a multifaceted analysis with the selection of three organically interrelated basic aspects: of ownership, phasic and vertical (according to the levels of the system of production relations).<sup>1</sup> Since socialist production relations are a developing system, their multiaspect analysis (as well as analysis according to individual aspects) includes the historical-genetic approach as a component factor.

In the study of the problems under consideration, the most important is the aspect of ownership. Constituting the deepest essential relation, ownership of the means of production "permeates" the entire system of production relations (including relations on manpower reproduction), determining their social-economic character and ensuring social-economic unity integrity of the whole system. When analyzing questions of intensification of manpower reproduction in the aspect of ownership, it is necessary to study them as well from the point of view of realization of fundamental economic law. In organizing production activity, society considers itself and its members as a productive force.

In studying manpower reproduction, it is necessary to take into account that the association of free workers under socialism represents: (1) the owner of the means of production; (2) a managing subject; (3) the chief productive force. At the same time, the aim of its activity is not simply satisfaction of needs but also the provision of conditions for the all-round development of all members of society.



Ownership relations have their own structure, expressed first and foremost in the existence of different forms of ownership within whose limits the process of manpower reproduction has a certain specific character. Thus, the existence of nationwide ownership makes it possible to solve a number of problems of manpower reproduction on a nationwide level on the basis of the interests of all members of society. This is manifested in particular in the organization and structure of universal education, in the development of a network of secondary and higher educational institutions, in the regulation of manpower distribution and so on. The existence of kolkhoz-cooperative ownership and the economic independence of enterprises within the framework of state ownership give rise to the objective necessity of solving a number of problems on reproduction of manpower on these levels. A part of the social-economic problems of reproduction of manpower is solved on the level of the individual and family (choice of vocation, residence, sphere of application of labor and so on). Under socialism, society has undertaken providing the most important sides of economic manpower reproduction: equal relation to the means of production, equal pay for equal labor, equal opportunities for obtaining an education, medical assistance and so on. But because of an insufficiently high level of development of productive forces, society in the first phase of the communist method of production is still unable to assume fully all the economic and organizational aspects of manpower reproduction. Moreover, under the conditions of socialism, it is still necessary to utilize individual material interest in the results of labor at socialist enterprises, and this requires the establishment of the relation of individual conditions of manpower reproduction on the labor contribution to social production.

Consideration of the hierarchy of all these levels, brought about by ownership relations (with the determining role of the nationwide level),<sup>2</sup> is an obligatory condition for ensuring intensification of manpower reproduction.

The next most important aspect of the study of manpower reproduction is the phasic. It pertains to the formation of socially useful manpower, its distribution and utilization. At the same time, it is extremely important to concretely express the unity of this aspect with the two others. Underestimation of the connection with the first aspect results in particular in the fact that the whole complex of characteristics of workers as members of socialist society is not taken into consideration: they, for example, considered either only as owners of the means of production or only as a productive force. If in the analysis of the phases of manpower reproduction relations levels of the system of production relations are not taken into account there occurs a mixing of problems both on the theoretical plane as well as from the point of view of elaboration of practical measures to intensify this process in particular. For example, in the case of insufficiency of workers of some skill at individual enterprises and even in regions, it is proposed to increase the training of such specialists without taking into consideration of needs on the scale of the whole national economy. At the same time, such accounting also shows that the problem lies not in expansion of training but in distribution of specialists, in changing conditions of their labor, pay and so forth.

The initial phase of manpower reproduction is the forming of its social usefulness --the ability of workers to create with their labor material benefits and services. This capability depends on many factors, the most important of which are: physical condition, general educational level, vocational training, skill level, attitude toward labor and the like. The process of formation of the social usefulness of

manpower proceeds in the presence of specific features at all levels of the system of production relations. From the point of view of control of this process the most important is the nationwide level on which global questions are decided: formation of a joint work of society, provision of a possible and necessary level of material well-being, development of a system of education, medical services and so forth. Creation of social usefulness of manpower is planned along different lines, the chief of which is improvement of labor conditions; involvement of all able-bodied people is provided in public production with account being taken of their abilities, provision of a necessary level of education and skill, achievement of correspondence for quality, ability level and labor conditions. All these also serve as very important directions of intensification of manpower reproduction.

In the creation of social usefulness of manpower, one should proceed from the need of providing quantitative and qualitative correspondence of personal and material factors of production. It should be provided at all levels of management; at the same time, the higher the level, the greater are the possibilities of losses from incompatibility. The conditions of mature socialism create tremendous opportunities for the development and improvement of the constructive capacities of people and growth of social usefulness of manpower. At the same time, these conditions require special knowledge, a high level of vocational training and of the general culture of the individual.

Nationwide tasks of molding social usefulness of manpower in one way or another are concretized at different levels of the system of production relations.

At the national-economic level, there are resolved such questions as establishment of proportions in cadre training for the sphere of material and nonmaterial production, accounting of the need for specialists among individual sectors and regions of the national economy and so on. This calls for consideration of the developmental tendencies of technology and appropriate organization of a system of teaching workers. "Together with the development of the national economy, demand is changing for cadres of one or another specialty. This means that the system of planning cadre training in VUZ's must sensitively react to these changes," Comrade L.I. Brezhnev pointed out in the Accountability Report of the CPSU Central Committee to the 26th party congress.<sup>3</sup> This level needs, first, the development of scientific forecasts of the structure of aggregate manpower based on an analysis of the factors influencing it, first of all scientific-technical progress and, second, determination of the need for skilled cadres on the basis of vocations, sectors and territorial units for the long term. For this, it would be advisable in our view to create a centralized system of accounting of the movement of and need for specialists on a regional scale and to develop a "model" of the aggregate need for them over the long term in the context of individual specialties with account being taken of scientific-technical progress. Such measures would increase the possibilities of intensification of manpower reproduction on the regional scale and would serve as an important stage in the creation of a unified automated system of accounting of training and factual utilization of the country's labor resources.

The next level of the system of production relations is the enterprise level. At the present stage, the association is becoming a basic element of public production, a primary operational cell; it exercises a significant influence on the process of manpower formation. The new form of organization of production brings closer

together relations between changes in the process of production on the basis of scientific-technical progress and changes in the formation of social usefulness of manpower; it makes it possible to reduce the time lag between these processes. The major possibilities of associations in developing a scientific base and in qualitatively improving the means of production create an objective basis of progressive transformations in the content and character of labor. Workers of associations should be prepared both theoretically and practically for such transformations.

The training required in this connection should be and ought to be carried by vocational technical schools attached to leading associations in the sector, *tekhnikum*s and even possibly branches of VUZ's (interesting experience in this regard is available at the *Metallicheskiy Zavod imeni XXII S"yezda KPSS* Production Association (Leningrad) where a higher technical educational institution has been in operation for an extended period of time). Possessing effective information on the directions of scientific-technical progress in a given association, such educational institutions to a large extent can ensure vocational mobility of workers and their readiness and ability to quickly and actively adapt to changing conditions on the basis of a knowledge of the long term.

At the present time, about 6 million persons are being taught at work new vocations each year and more than 20 million workers are upgrading their skills. The decree of the CPSU Central Committee and the USSR Council of Ministers "On Measures for Further Improving the Training and Upgrading of Qualifications of Workers in Production" (1979) and the materials of the 26th CPSU Congress pointed out the need of a further significant development of the system of vocational training of cadres in production.

Another direction in improvement of cadre training at this level lies in activation of ties of associations with VUZ's;<sup>4</sup> this makes it possible to significantly increase the effectiveness of the former and the latter in the formation of social usefulness of manpower. A form of such activation of the ties is the creation of basic departments of VUZ's at enterprises. There would be definite significance in strengthening of the ties of higher school with enterprises by the practice of locating students at the place of their future work in earlier periods (1-3 years prior to completion of VUZ's) with subsequent transition to the development of five-year plans of distribution and bringing of plan indicators to enterprises and VUZ's. In the future, this would make it possible to go on to the training of specialists on the basis of orders not only of ministries but also of individual associations. In this way it would be possible to organically unite five-year and long-term plans of operation of associations with five-year plans of training of specialists at VUZ's and thus eliminate to a significant degree losses from still existing discrepancies between changing requirements of production for specialists and their release from the country's VUZ's.

Associations possessing large resources can solve also important tasks of the social-economic plan: improvement of conditions of labor for the purpose of changing it into creative work, assurance of all-round development of workers, questions of formation of the new man and others. Thus there is realized at the enterprise the role of the worker both as owner and as managing subject, as the chief productive force and as a harmonically developed individual.



The process of creation of social usefulness of manpower also occurs at the level of the individual. The system of social planning of this process must increasingly encompass that group of questions which at the present time is solved independently and to a certain extent spontaneously by the individual. At the same time, it is necessary to pay special attention to the fact that labor for each individual should not simply be a means for the production of benefits but also of vital needs and a criterion of his social position. The system of cadre retraining should proceed from the need of continuous and systematic improvement of the abilities of each individual and therefore should be continuous and systematic, based on the revelation of the potentialities of each worker and on the consideration of his abilities.

Formation and improvement of the creative abilities of people results in the growth of the social usefulness of manpower only potentially, inasmuch as the physical and spiritual qualities of people have inherent in them only their capability for production of material benefits that is realized only in labor. Consequently, intensification of reproduction of manpower depends to a significant degree on the organization of the labor process and first and foremost on distribution of workers. Its material basis is the attained level of development of productive forces; on the other hand, scientifically based distribution and redistribution of manpower serve as a condition for achieving a progressive structure of public production and growth of its economic effectiveness. At the same time, other very important social-economic tasks are resolved: drawing closer together of the developmental levels of different regions, republics of the country and so on.

All-round intensification of production exerts a direct influence on employment of manpower and its redistribution in the national economy; it requires optimization of this process on the basis of strengthening its planned character. Each level of operation has inherent in it its own problems in the given field. Thus at the nationwide level, problems are resolved of distribution and redistribution of manpower between town and country, among large regions and establishment of proportions between persons working and not working in the national economy, between persons working and training.

In the '80s, the problem of labor resources is becoming, as we know, very acute. Hence the special importance of their rational use, which to a significant degree depends on distribution. At the present time, the biggest population growth is observed in the Central Asian republics. Consequently, there is a need in these regions of providing a preferential rate of development for labor-intensive sectors of industry and for training of specialists for them, which will make it possible to speed up the process of urbanization and increase the migrational mobility of the local population. The same problems are felt in certain other regions, particularly in the republics of the Transcaucasus. While appearing at a triumphal meeting devoted to the 60th anniversary of Georgian SSR and the Communist Party of Georgia, Comrade L.I. Brezhnev pointed out: "A very important problem of yours is fuller utilization of labor resources. They should be more actively brought into the solution of key economic problems both within the republic and beyond its limits."

For the present time, a characteristic direction of redistribution of labor resources is the organized migrational flow of manpower to the north. Its aim is



the development of the rich natural resources of sparsely settled localities. Thus the population of Khanty-Mansiyskiy and Yamalo-Nenetskiy okrugs has more than doubled in 9 years; that of Yakutskaya ASSR increased 26 percent, of Kamchatskaya Oblast--31 percent and of Magadanskaya Oblast--32 percent. The population along the route of the BAM has grown manifold. This is in accord with the decision of the CPSU Central Committee and the Soviet government to strengthen the concentration of resources on the fulfillment of statewide goal programs, among which the development of the BAM zone is a first-priority task.

Thus, at the nationwide level of operation, global economic and social problems are solved.

Basic organizational forms of redistribution of labor resources on the nationwide level of operation include: assignment of young specialists completing vocational and technical schools and medium and higher educational institutions; public appeals, organized resettlement of families and others. Economic forms of stimulating this process include establishment of a dependence of pay and receiving of other benefits (length of workday, leave, sizes of pension and pension age and the like) on the importance to the national economy of region, sector or the object of labor application.

A consistently systematic, scientifically based regulation of distribution and redistribution of manpower makes it possible to provide especially important facilities, regions and sectors with labor resources in the shortest possible time, raising thereby the effectiveness of the entire national economy. The development of the scientific-technical revolution under present conditions, orientation toward all-round intensification require raising the scientific level of control of this process and its increasing encompassment by socially organized forms. At the present time, the latter, despite their higher relative share, take in less than one-quarter of the process of manpower redistribution. The CPSU Central Committee and the USSR Council of Ministers imposed on the USSR State Committee for Labor and Social Problems the duty of "providing Gosplan USSR with proposals and calculations for balances of labor resources within a territorial framework; developing and carrying out economic and organizational measures aimed at increasing a planned approach to the distribution and redistribution of manpower, reducing turnover and holding cadres."<sup>5</sup> This should strengthen centralized planned regulation of cadre distribution.

Tasks of controlling the movement of manpower, determined at the nationwide level, are concretized at subsequent levels of management. Thus, at the national-economic level, manpower distribution is regulated between the spheres of material and non-material production and among sectors and regions. In the sphere of material production, sectorial proportions are determined by the rate of scientific-technical progress, which leads to a comparative increase of employment in industry compared to agriculture, to the accelerated development of fuel-and-power, metallurgical and chemical industry, machine building and so forth.

Localized at the specific regional level, the tasks of distribution and redistribution of manpower require ensuring the complex development of a given region on the basis of correspondence between the spheres of material and nonmaterial production, optimal use of labor resources in individual sectors and so on. An important form of planned distribution of manpower within regions is organized labor placement,

for which specially created organs exist. The latter have been shown to have a rather high level of effectiveness; at the present time, their further strengthening and development of functions are required.

A special specific character is to be found in manpower distribution and redistribution at the level of the enterprise (association). The aggregate work force of an enterprise is distinguished by its internal structure in accordance with the special features of the manufacturing process. Inasmuch as scientific-technical progress leads to the continual improvement of the means of labor, it requires constant changes in the enterprise's aggregate work force. At the same time, several different tendencies are at work here: expansion of enterprises calls for an increase in the number of workers; scientific-technical progress results in the release of a portion of the workers since the machine is becoming a powerful replacer of labor and workers.<sup>7</sup> Moreover, changes in the manufacturing process occur on the basis of technical progress and for this reason in the structure of needed workers. Planned regulation of the movement of the work force at an enterprise should originate from an analysis of these tendencies.

One of the socially organized forms of regulation of manpower distribution at enterprises and to a certain extent among them is the planned organized transfer of workers to other work. This form of distribution should be based on the consideration of the developmental prospects of the enterprise on the basis of technical progress, expected quantitative and qualitative changes in the aggregate work force, the possibilities of cadre retraining with the forces of the given enterprise or outside of it. On this basis as well as because of the workers' inclinations and the degree of their satisfaction with their present and future work, the transfer of workers to other jobs is organized in a planned manner (at the particular enterprise or beyond its limits). All this must find its reflection in long-term complex plans of economic and social development of the enterprise. At a number of enterprises, programs are being developed for job promotions of workers, which are planned in accordance with the possibilities and needs of enterprises and the prospects of vocational, skill and official growth of each employee on the basis of his abilities. The development and realization of such programs serve as an important factor for cadre stabilization at an enterprise and at the same time prepare the basis for their rational shifting if it serves the interests of society and the worker.

The culminating phase of manpower reproduction is its utilization. In this phase, the social usefulness of manpower is realized. The effective use of manpower depends on the effectiveness of the prior phases--creation of social usefulness and distribution--and on the effectiveness of the immediate labor process. Intensification of manpower reproduction requires also intensification of the labor process. A special feature of this phase is that direct use of manpower occurs at the level of the enterprise and the individual, but its effectiveness is to a significant degree predetermined by the preceding phases proceeding at all levels of the economy. Consequently, the effectiveness of the labor process serves as a final, resultant indicator of the degree of intensification of all phases of manpower reproduction. There stems from this the particular importance of organization of the labor process, since it is namely here that the work of all society (all levels of operation) is realized in connection with the reproduction of manpower and its intensification.

mechanization and automation and improvement of production technology on the basis of scientific-technical progress serve as basic directions of intensification of the labor process, ensuring economy of living and embodied labor. Major reserves in this regard are to be found in particular in mechanization of auxiliary work where the share of manual labor is still very high. Outlays on the mechanization of such work make it possible to release fourfold to sixfold the number of workers released by mechanization of basic production.

But the tempo of displacement of low-skilled work and manual work is inadequate. It is being increasingly contradicted by a high growth rate of creation and qualification of workers. Such a situation results in "a multiplication or increase in degree" of losses: on the one hand, the potential of skilled cadres is not fully utilized and, on the other hand, you have a paradox: the quality of such labor is lower in people with a higher level of education. Moreover, as a consequence of the former and the latter, dissatisfaction with work arises; hence you have low labor discipline, a large cadre turnover and the like. The low labor productivity of auxiliary workers holds back the growth of productivity in basic production. The situation is exacerbated by the fact that there arises and is gradually aggravated the problem of a "deficit" of workers agreeing to low-skilled manual forms of labor, inasmuch as young people joining the ranks of the able-bodied population have a relatively high general educational level; they strive to constantly raise it and therefore do not wish to be engaged in such forms of labor. Improvement of the said situation is abetted in particular by the fact that at the present time targets for curtailing the use of manual labor are being set. The major importance of the considered problem was disclosed in the Accountability Report of the CPSU Central Committee: "... elimination of manual, low-skilled and heavy physical labor.... This is not only an economic but also a serious social problem. To solve it would mean the elimination of significant barriers to the transformation of labor into the first vital requirement of each person."<sup>8</sup>

Important directions of intensification of the labor process include curtailment of losses of worktime and nonproductive outlays of labor, improvement of labor organization, management structure of enterprise. Defects of organization of the labor process on this plane result in the necessity of using a relatively big number of workers, that is, the tendency exists of reproduction of excessive employment, which is estimated in the amount of 10-20 percent.<sup>9</sup> "To achieve a significant improvement of labor discipline, order and organization in production.... To ensure full and rational utilization of worktime in each sector of production...."—are the very important tasks set by the 26th CPSU Congress.<sup>10</sup>

Realization of existing reserves requires strengthening of economic stimulation of enterprises and individual workers. In accordance with the decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979, the following labor indicators were established centrally: growth of labor productivity; pay norms per rouble of production; a limit to the number of workers and employees; a target for reduction of manual labor. This should ensure the interest of enterprises and their responsibility for better utilization of the work force and for reduction of its size. Increasing the incentives of enterprises for effective utilization of workers, for economy of live labor with increased production and for higher labor productivity is helped by the dissemination of the Shchekino method with all possible means, making it possible to improve the use of the work force



and to expand the brigade form of organization and remuneration of labor, which in the 11th Five-Year Plan must, as we know, become basic. The entire system of planning and economic stimulation must be directed toward a "thrifty, economic attitude in regard to labor resources."<sup>11</sup>

Such in brief are the very important directions and possibilities of intensification of the labor process as a constituent part of intensification of all manpower reproduction.

#### FOOTNOTES

1. For more detail on this, see: Vladimirovskiy, Ye.A. and Pavlova, I.P., "Lichnaya sobstvennost' kak ekonomicheskoye otnosheniye" [Personal Ownership as an Economic Relation]. Leningrad, 1977, pp 23-40.
2. The limited size of the article does not permit an examination of the process of manpower reproduction from the point of view of the total aggregation of relations of ownership. For this reason our analysis only touches the most important and significant level--relations of nationwide state ownership.
3. "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress]. Moscow, 1981, p 60.
4. The importance of this is noted in particular in the decree of the CPSU Central Committee and the USSR Council of Ministers "On Further Developing Higher School and Raising the Quality of Training of Specialists" (1979).
5. PRAVDA, 23 May 1981, p 1.
6. On Further Improving the Economic Mechanism and the Tasks of Party and State Organs. Decree of the CPSU Central Committee of 12 July 1979. On Improving Planning and Increasing the Action of the Economic Mechanism in Raising Efficiency of Production and Quality of Work. Decree of the CPSU Central Committee and the USSR Council of Ministers of 12 July 1979. Moscow, 1979, p 27.
7. See: Marx, K and Engels, F. "Sochineniya" [Works]. 2nd ed., Vol 23, p 406.
8. "Materialy ....", op cit, p 57.
9. See: Ushkalov, I., "Ways of Boosting Efficiency of Use of Live and Embodied Labor."--EKONOMICHESKIYE NAUKI, No 7, 1977, p 125.
10. "Materialy ....", op cit, p 200.
11. Ibidem, p 41.

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## LABOR

### BOOKS ON SOVIET WORKING WOMEN REVIEWED

Moscow EKONOMICHESKIYE NAUKI in Russian No 10, Oct 81 pp 112-114

[Review by Ye. Kogotkova, docent and candidate of economic sciences (Tomsk), of books "Sotsial'no-ekonomicheskiye problemy zhenskogo truda" [The Socioeconomic Problems of Female Labor] by I. Ye. Tomskiy, Novosibirsk, Nauka, 1979, 203 pages, edited by V. N. Antipin; "Sotsial'no-ekonomicheskiye problemy zhenskogo truda" by N. M. Shishkan, Moscow, Ekonomika, 1980, 144 pages, edited by O. V. Mol'kova]

[Text] The complex and multifaceted topic of female labor is being given increasing attention in economic science. It is distinct from social labor in general primarily because a woman has to combine production activity with the performance of the extremely important socioeconomic functions of a mother and with the big job of keeping house.

The books being reviewed (which have the same title, unfortunately) are works in which questions connected with the formation and employment of the female labor force are examined with a view to the developing technological revolution. Scientific and technical progress results in the employment of more women no matter what the traditional production structure may be. As for the nature of female labor, the forms of its organization and the methods of encouraging women to work, they depend entirely on the prevailing type of property relations in the society. Authors who analyze the patterns of female involvement in social production and the status of women in society proceed from Marxist-Leninist doctrine in regard to female labor and from the need to establish the complete and actual equality of men and women. The books being reviewed share this common subject matter although they examine these topics from different vantage points. N. M. Shishkan's work is of a theoretical-methodological nature. The author was chiefly concerned with defining the basic methodological premises in the examination of the essence of female labor, its nature and content and the forms it takes and presenting a comprehensive analysis of the problems of working women and the means of solving them within the developed socialist society. The analysis is conducted primarily on the national economic level with the aid of the findings of the author's sociological research at enterprises in Moldavia. In I. Ye. Tomskiy's book the socioeconomic features of female labor in the developed socialist society are analyzed for the first time with a view to the regional peculiarities of the Far North.

Questions connected with the efficient use of female labor in various spheres (industry, construction and agriculture) are examined with the aid of information

gathered in the Yakutskaya ASSR. The research is based on statistics, archives and the data of statistical and sociological analyses. In all, the author surveyed around 4,000 people during the course of concrete sociological studies in the Yakutskaya ASSR and Krasnoyarskiy Kray. They talked about the motives of professional working women, the ways in which they budget their free time and the views of married women on ideal and anticipated family size. Sociological research findings are used in all four chapters of the work, but they are presented in considerable detail in the second chapter, "The Socioeconomic Features of Female Labor and the Development of the Northern Regions of the USSR," and the third, "The Socioeconomic Aspects of Motherhood."

The authors present detailed descriptions of the advantages of the socialist economic system, which is giving women increasing opportunities to participate in various spheres of activity and perform effective labor. The five chapters of N. M. Shishkan's work illustrate the need for political and economic analyses of female labor. The author examines the division of labor as the objective basis for the origination and development of the socioeconomic peculiarities of female labor, analyzes the process by which general and particular differences are disappearing from the conditions for the reproduction of the male and female labor forces and explains how economic laws are employed with a view to the peculiarities of female labor. In his discussion of the distinctive features of female labor in the developed socialist society, the author points out the increasing need for participation by women in social production, the further development of societal methods of satisfying needs and raising children, the simplification of housework, the improvement of cooperation within the family and the development of transitional forms of labor. Prospects for change in the content and conditions of female labor are examined in the last chapter of the work.

In I. Ye. Tomskiy's book the socioeconomic features of female labor, the modification of the structure of this labor force, the "feminization" of certain branches of the non-production sphere and qualitative changes in the professional skills of working women are examined with the aid of the data of sociological studies conducted in newly settled northern regions of the USSR.

The authors of both books note that some elements of socioeconomic differences between the sexes have still not been eliminated from the developed socialist society. Tomskiy believes that these differences are particularly tenacious in the home. Their eradication has been complicated by the fact that they have the force of tradition and are related to the specific historical development of individual regions. These differences are also evident in the production sphere. For example, a survey of persons in 153 occupations in 5 branches of industry proved that even when women have a higher general educational level than men, they cannot compete with them in terms of professional skills. This naturally lowers their average wage (see p 35).

Tomskiy stresses the need to take the physiological peculiarities of the female organism into account and proposes that more restrictions be imposed on the employment of women in heavy and hazardous occupations, that a part-time work day be instituted and that more opportunities for work in the home be offered. We must admit that these are not original ideas: They have already been set forth many times in our literature, and not only in scientific literature. In this sense, Shishkan's work is more specific because the author cites data derived from his

sociological studies at Moldavian enterprises to illustrate the advantages of part-time work.

The third chapter of Tomskiy's work is particularly interesting. Here the author describes the demographic situation in the Yakutskaya ASSR, analyzes the data of his sociological survey of 22,000 urban and rural women (Yakuts, Russians and members of minor northern ethnic groups) and reveals the change in northern women's attitudes toward family size--a change from traditional to more modern views. Tomskiy believes that the objective process of the reduction of family size in northern ethnic communities within the range required for the expanded reproduction of the population is a progressive process.

From surveys and interviews in rural locations and at industrial enterprises, the author learned that young mothers are responsible for all housework in most families. Tomskiy proposes the following ways of increasing the free time of working women and guaranteeing their successful participation in social production: the construction of more residences with all of the necessary conveniences and more public dining enterprises, the opening of more consumer service enterprises and the improvement of the quality of their work, the better training of personnel for pre-school establishments, the organization of comprehensive vocational guidance services for the younger generation, etc. (p. 191-200).

As for N. M. Shishkan's study, despite its merits, we cannot agree with all of the statements he makes. For example, in the discussion of the methodological premises of the study of female labor, the need for political and economic analysis is substantiated by the natural features of working women as compared to men. In this connection, the author coins the distinguishing terms "female labor" and "women's labor." He says that "female labor signifies any specific type of socially necessary work which might be performed by a woman in line with the distinctive features of her working ability, stemming from the physical and psycho-physiological peculiarities of her organism, which presupposes the performance of relatively light (in the physical sense) work by women." Later he says: "Along with the concept 'female labor,' we will employ the term 'women's labor' to signify labor that is actually performed by women" (p 15). It seems to us that this kind of distinction is hardly valid: The terms "female labor" and "women's labor" do not have different connotations; the substitution of one for the other will not make any change in meaning. It is not surprising that these terms have been equated in all preceding studies of this topic. It is also not surprising that the author himself does not adhere strictly to his own terminological distinctions.

We also cannot agree with Shishkan's statement that the augmentation of labor productivity automatically promotes an increase in leisure time (p 130). This is not in any sense an absolute relationship. The augmentation of labor productivity establishes conditions for the reduction of work time. This, however, does not automatically increase leisure time: The increase in time not spent on the job can be absorbed by other forms of work (usually housework). Incidentally, the author later correctly notes that a change in the structure of non-working time does not automatically lead to an increase in leisure time: In particular, the reduction of time spent on housework is absorbed by time spent on the satisfaction of physiological needs (p 128).



We could hardly agree completely with N. M. Shishkan's statement that participation by women in social production creates favorable conditions for the reproduction of the female labor force and for having children and rearing them (p 56). Demographic processes depend on numerous factors, and these sometimes work in opposite directions. The findings of a number of sociological studies cited in literature testify that production activity by women decreases the birth rate. Furthermore, we have doubts about Shishkan's assertion that night shifts will be needed more in the non-production sphere than in branches of physical production in the future (p 126). In physical production the need for night shifts stems from the continuity of the technological process, whereas this requirement exists in only a few branches of the non-production sphere.

In our opinion, some of the statements in I. Ye. Tomskiy's work are not absolutely accurate either. For example, the author says that the difficulties women encounter when they combine the functions of a career woman, mother and housewife are among the main factors that will keep women from having children within the next 5 years (p 131). The figures in the table on page 130 testify, however, that only 4.83 percent of the Russian women, 8.05 percent of the Yakut women and 5.55 percent of the women of minor northern ethnic groups regard work in the production sphere as a factor precluding childbirth. We can hardly agree with the author's remark that some economists equate the terms "non-working time" and "leisure time" (p 175) because it is now the common belief that leisure time is only part of non-working time.

Furthermore, I. Ye. Tomskiy's criticism of V. G. Kostakov and P. P. Litvyakov, who suggest that the time spent on housework and private subsidiary farming should be categorized as work time, does not seem logical enough. This criticism essentially consists only in the assertion that "the objective similarity of expenditures of time on labor in the household and the private plot should not interfere in the classification of expenditures of social time with a view to the differences between working time and the time spent working in the household and the private plot" (p 177). We believe that time spent on housework can only be regarded as part of working time if the terms "work" and "working time" are equated. However, despite the fact that these categories are organically related and that working time is always a way of measuring work, they are not identical. We could draw an analogy with the interconnection of such terms as "money" and "capital." Everyone knows that the initial source of capital is money, but money in itself is not capital. Similarly, working time is always work, but not all work is working time. The inclusion of the time spent on housework and private farming in total working time will artificially increase working time and decrease non-working time in the overall time schedule.

In conclusion, we must say that these isolated shortcomings do not diminish the merits of these two works on the whole. They are distinguished by a sufficiently high scientific level and the thorough elucidation of a number of complex and important topics. There is no question that these books will be useful to teachers of socioeconomic subjects and to the undergraduates and post-graduates studying in these fields, research associates and the managers of enterprises and their party and trade-union aktiv.

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## EDUCATION

### KAZAKH PRESCHOOL FACILITY CONSTRUCTION PROBLEMS

Alma-Ata KAZAKHSTANSKAYA PRAVDA in Russian 22 Nov 81 p 2

[Article by L. Rustemov, KaSSR deputy minister of education: "In Debt to the Children"]

[Text/ The importance of pre-school institutions in the life of our society is exceptionally great. As many years of experience have shown, they provide small children with a multi-faceted moral upbringing, prepare them for instruction in school, to receive basic ideological values, and they form the psychology of a collectivist. And, at the same time, they constitute an important social and economic factor according women the opportunity of being included within the sphere of social production labor. The socialist state has not spared any means to develop a network of these institutions: in our republic during the 10th Five-Year Plan some 65--67 million rubles of capital investments were allocated annually solely to erect new children's nurseries and kindergartens. In Kazakhstan approximately 880,000 pre-school children are encompassed within the system of public education.

However, the public's need for kindergartens is still great, and it is being met insufficiently, primarily because of the slow pace of construction. For example, in Uralskaya Oblast last year they were supposed to open according to the plan 8 kindergartens with 930 vacancies, but only one was put into operation with 50 vacancies. Large lags were also allowed by Aktyubinskaya, Dzhezkazganskaya, and Dzhambul'skaya Oblasts. During the past five-year plan more than 72 million rubles of capital investments were not utilized, and, as a result of this, 23,800 vacancies less were obtained than had been planned. It is not hard to imagine what harm this inflicted, since, of course, many mothers were deprived of the opportunity to work because they were compelled to stay at home and look after their own small children.

A few children's institutions have been built by using the funds of local Soviets, but even the allocated funds are not being fully utilized. This pertains primarily to the Guryevskaya, Kzyl-Ordinskaya, and Mangyshlaks'kaya Oblasts. Certain ministries and departments are in great debt to the small children. The Ministry of the Food Industry fulfilled the five-year plan for introducing children's institutions by only 71.5 percent, and the Ministry of Light Industry by 74 percent, and, you know, the enterprises within the system of these ministries employ a great many women. For example, more than 2,000 women work at the knitted outer-wear factory (Semipalatinskaya Oblast), but this factory has no kindergartens at all. Hence, there is a considerable personnel turnover as well as economic losses

because of a workers' shortage. There must occur an abrupt change of attitude toward the construction of pre-school institutions on the part of the leading officials of the Ministries of Consumer Services, Municipal Services, Meat and Dairy Industries.

Also failing to cope with the plans are the republican Ministries of Power and Electrification, Nonferrous Metallurgy, Construction-Materials Industry, as well as the Union Ministries of the Chemical, Coal, and Petroleum Industries, and Ferrous Metallurgy. There are sectors which during the time that their enterprises have existed have not erected a single kindergarten.

The pace of construction in the rural areas is slow. There are 60 sovkhoses and 105 kolhoses in the republic which do not have permanent pre-school institutions.

Far from all the possibilities for developing a network of kindergartens and nurseries are being utilized in the localities. Certain departments do not practice allocating for these purposes supplementary capital investments amounting to 2.5 percent of the total volume of construction and installation work, as provided for the construction of production-type projects. The local Soviets of People's Deputies have the right to resolve, with the consent of enterprises, institutions, and organizations, questions of the joint utilization of the funds allocated to them for improving housing, social, and cultural-communal construction. However, even this source has remained primarily in reserve.

But what is the situation during the current year? The year's limit on capital investments for putting children's institutions into operation has been utilized for the first 10 months by 55.2 percent. In the republic's capital at the four projects underway, the client for the construction of which is the gorispolkom (with Glavmaastroy as the contractor), only 50 percent of the work in accordance with the year plan has been fulfilled. At two of these projects the earthwork and the laying of the foundations have just begun. In connection with the low degree of construction readiness and the slow pace of operations, there is a danger of failure in the putting into operation of kindergartens of the Ministries of Power and Electrification, Highways, the Kinodetal' Production Association, and the tobacco combine.

Unfortunately, there are quite a few such facts. The situation is alarming in the Ministries of Construction of Heavy Industry Enterprises (13 out of 42 projects underway have been put into operation), Agriculture (17 out of 51). Not a single kindergarten has been provided by the Ministries of the Meat and Dairy Industry, Fruit and Vegetable Industry KASSR, and the Ministry of the Chemical Industry USSR.

In Kustanayskaya Oblast 23 schools and 32 kindergartens are in the construction stage (with 13 and 18 respectively in the start-up stage). At least 7 kindergartens, at most of which only the walls are being installed, will hardly open their doors before the New Year. The situation is no better in Karadinskaya, Pavlodarskaya, Tselinogradskaya, Dzhezkazganskaya, and Turgayskaya Oblasts.

But the most unsatisfactory situation has taken shape in Uralskaya Oblast, where, without taking into consideration the capacities of the contracting construction organizations of the republic's Ministry of Rural Construction (the principal

contractor), the material base and labor resources of the oblast, about 30 schools and 20 pre-school children's institutions are included annually within the construction plan. Most of them are being built over a period of 5--6 years instead of the 5--7 months as established. These include the kindergarten in the settlement of Akzhaik, the kindergarten in the Pugachevskiy Sovkhoz of the Berlikskiy Rayon (under construction since 1974), and others.

It has become a rule that the contracting construction organizations for a long time have been diverting manpower and material-technical resources from pre-school institutions to other projects, and only at the end of the year does the usual "crash work" begin, and this leads to a large amount of unfinished work and a poor quality of work. It is not surprising that even after being turned over for operation, kindergartens do not accept the small children for a long time.

A substantial negative factor is the planning of simultaneous construction of a large number of kindergartens within a single oblast, especially when the plan includes many newly begun projects, while the ones in progress do not repay their capital investments for their introduction. Consequently, there is an inevitable dispersal of the material and labor resources of the contracting construction organizations. This pertains in equal measure as well to construction by the economic method since the clients frequently begin work without having either the funds for materials or the necessary skilled manpower.

There are frequent instances where the local Soviets allocate sections for building kindergartens with a great deal of demolition of /older/ structures, especially apartment houses. As a result, construction is slowed up.

The contracting construction organizations and clients must immediately examine the construction status of each pre-school institution, adopt additional measures to enlist for the construction projects materials, mechanisms, manpower, in order to ensure the complete utilization of the funds which have been allocated and the timely putting into operation of the projects which are underway.

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## EDUCATION

### CENSUS DATA ON SCIENTIFIC PERSONNEL BY REPUBLIC

Moscow VESTNIK STATISTIKI in Russian No 11, Nov 81 pp 75-79

[Text] Number of Scientists With Academic Degrees and Titles by Union Republics; number of persons, as of the end of the year

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
USSR					
Total number of scientists	354,158	927,709	1,223,428	1,340,579	1,373,263
Distribution of those with academic degrees:					
Doctors of sciences	10,945	23,616	32,264	37,089	37,747
Candidates of sciences	98,262	224,490	326,767	383,592	396,244
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	9,907	18,095	22,942	26,860	27,381
Docents	36,155	68,581	87,884	105,752	110,698
Senior staff scientists	20,259	39,005	53,323	63,756	65,951
Junior staff scientists and assistants	26,693	48,849	44,978	42,275	41,101
RSFSR					
Total number of scientists	242,872	631,111	838,473	918,068	937,665
Distribution of those with academic degrees:					
Doctors of sciences	7,929	16,135	22,105	25,373	25,838
Candidates of sciences	67,146	145,071	212,363	249,208	257,329
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	6,784	11,859	15,146	17,500	17,885
Docents	23,610	42,926	53,783	64,096	66,902



RSFSR (continued)

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
Senior staff scientists	14,202	25,184	34,574	42,204	44,012
Junior staff scientists and assistants	17,783	32,141	30,367	30,296	29,423
Ukrainian SSR					
Total number of scientists	46,657	129,781	171,478	189,767	195,782
Distribution of those with academic degrees:					
Doctors of sciences	1,343	3,123	4,163	4,755	4,842
Candidates of sciences	13,622	33,317	47,308	56,063	58,002
Distribution of scientists who have academic titles:					
Academy members, corre- sponding members, pro- fessors	1,308	2,590	3,211	3,764	3,818
Docents	5,892	12,079	15,106	18,454	19,221
Senior staff scientists	2,290	5,085	6,850	8,159	8,395
Junior staff scientists and assistants	1,731	3,516	2,266	2,040	1,880
Belorussian SSR					
Total number of scientists	6,840	21,863	31,020	36,518	38,130
Distribution of those with academic degrees:					
Doctors of sciences	181	425	624	752	779
Candidates of sciences	2,013	5,564	8,362	10,269	10,820
Distribution of scientists who have academic titles:					
Academy members, corre- sponding members, pro- fessors	185	382	485	626	657
Docents	855	1,962	2,724	3,365	3,679
Senior staff scientists	369	855	1,278	1,580	1,709
Junior staff scientists and assistants	718	1,036	1,001	1,210	1,273
Uzbek SSR					
Total number of scientists	10,329	25,244	30,835	34,281	35,288
Distribution of those with academic degrees:					
Doctors of sciences	222	494	745	903	939
Candidates of sciences	2,442	6,907	10,505	12,470	12,992

Uzbek SSR (continued)

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
Distribution of scientists who have academic titles:					
Academy members, corre- sponding members, pro- fessors	241	423	560	738	764
Docents	1,021	2,126	2,958	3,692	3,941
Senior staff scientists	431	956	1,291	1,472	1,509
Junior staff scientists and assistants	687	890	1,255	1,457	1,593

Kazakh SSR

Total number of scientists	9,623	26,802	32,011	36,046	37,390
Distribution of those with academic degrees:					
Doctors of sciences	157	421	607	713	708
Candidates of sciences	2,123	6,272	9,642	11,214	11,621
Distribution of scientists who have academic titles:					
Academy members, corre- sponding members, pro- fessors	178	340	468	553	557
Docents	793	2,009	2,844	3,573	3,769
Senior staff scientists	566	1,097	1,655	1,773	1,776
Junior staff scientists and assistants	1,530	1,646	1,646	1,108	772

Georgian SSR

Total number of scientists	9,137	20,160	24,941	25,015	25,198
Distribution of those with academic degrees:					
Doctors of sciences	430	989	1,228	1,317	1,335
Candidates of sciences	3,207	5,860	7,679	8,866	9,104
Distribution of scientists who have academic titles:					
Academy members, corre- sponding members, pro- fessors	392	814	911	1,036	1,045
Docents	1,195	1,698	2,183	2,547	2,696
Senior staff scientists	739	1,752	1,912	2,115	2,019
Junior staff scientists and assistants	1,184	3,084	1,608	613	616

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
<b>Azerbaijan SSR</b>					
Total number of scientists	7,226	17,082	21,280	21,707	21,993
Distribution of those with academic degrees:					
Doctors of sciences	189	652	811	910	907
Candidates of sciences	1,983	5,346	7,196	8,023	8,186
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	204	506	623	700	708
Docents	743	1,141	1,862	2,152	2,174
Senior staff scientists	474	1,197	1,523	1,622	1,515
Junior staff scientists and assistants	682	2,042	3,145	2,631	2,323
<b>Lithuanian SSR</b>					
Total number of scientists	3,320	8,978	12,538	13,878	14,307
Distribution of those with academic degrees:					
Doctors of sciences	31	182	274	334	347
Candidates of sciences	758	2,710	4,339	5,040	5,197
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	72	165	231	327	331
Docents	285	923	1,348	1,735	1,841
Senior staff scientists	87	389	676	799	864
Junior staff scientists and assistants	227	362	83	20	72
<b>Moldavian SSR</b>					
Total number of scientists	1,999	5,695	7,309	8,329	8,807
Distribution of those with academic degrees:					
Doctors of sciences	48	113	192	240	241
Candidates of sciences	564	1,834	2,882	3,425	3,506
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	39	97	142	184	183
Docents	198	519	699	905	922
Senior staff scientists	133	284	435	523	524
Junior staff scientists and assistants	196	589	668	66	76



	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
<b>Latvian SSR</b>					
Total number of scientists	3,348	8,895	12,024	12,408	12,583
Distribution of those with academic degrees:					
Doctors of sciences	6	175	262	325	332
Candidates of sciences	898	2,517	3,484	4,072	4,172
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	97	165	200	241	250
Docents	346	719	1,052	1,265	1,320
Senior staff scientists	177	387	543	648	669
Junior staff scientists and assistants	295	650	565	659	662
<b>Kirghiz SSR</b>					
Total number of scientists	2,315	5,867	7,131	7,874	8,194
Distribution of those with academic degrees:					
Doctors of sciences	56	128	172	200	198
Candidates of sciences	587	1,572	2,214	2,530	2,588
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	64	114	132	175	170
Docents	197	412	545	645	684
Senior staff scientists	110	309	462	462	469
Junior staff scientists and assistants	172	37	31	22	18
<b>Tajik SSR</b>					
Total number of scientists	2,154	5,067	6,629	7,221	7,590
Distribution of those with academic degrees:					
Doctors of sciences	33	102	149	176	183
Candidates of sciences	433	1,364	2,126	2,428	2,505
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	40	90	120	149	147
Docents	150	358	571	736	785
Senior staff scientists	111	204	335	400	409
Junior staff scientists and assistants	298	1,131	510	462	417

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
Armenian SSR					
Total number of scientists	4,275	12,808	17,138	18,269	19,059
Distribution of those with academic degrees:					
Doctors of sciences	164	482	630	701	700
Candidates of sciences	1,502	3,346	4,734	5,515	5,624
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	161	370	479	553	540
Docents	562	1,006	1,268	1,456	1,566
Senior staff scientists	364	821	1,091	1,182	1,262
Junior staff scientists and assistants	520	1,176	1,424	1,309	1,642
Turkmen SSR					
Total number of scientists	1,836	3,649	4,634	5,144	5,030
Distribution of those with academic degrees:					
Doctors of sciences	32	62	92	109	108
Candidates of sciences	361	1,200	1,714	1,937	1,998
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	52	54	62	84	84
Docents	102	239	331	412	437
Senior staff scientists	77	186	261	294	308
Junior staff scientists and assistants	329	13	1	--	--
Estonian SSR					
Total number of scientists	2,227	4,707	5,987	6,054	6,245
Distribution of those with academic degrees:					
Doctors of sciences	66	133	210	281	290
Candidates of sciences	623	1,610	2,219	2,532	2,600
Distribution of scientists who have academic titles:					
Academy members, corresponding members, professors	90	126	172	230	242
Docents	206	464	610	719	761

Estonian SSR (continued)

	<u>1960</u>	<u>1970</u>	<u>1975</u>	<u>1979</u>	<u>1980</u>
Senior staff scientists	129	299	437	523	511
Junior staff scientists and assistants	341	536	408	382	374

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## DEMOGRAPHY

### SOCIAL, PHYSICAL FUNCTIONS OF FAMILY ANALYZED

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[Article by M. Bok, docent and candidate of economic sciences (Yuzhno-Sakhalinsk): "The Family as the Focus of Demographic Policy"]

[Text] The theoretical premises set forth at the 26th CPSU Congress signaled new prospects for demographic science and specified future guidelines in effective demographic policymaking. The congress singled out the family as the focal point of demographic policy because it has a profound effect on demographic patterns and on the nature of problems in population settlement patterns, which have recently become more pronounced. "The principal way of solving them," Comrade L. I. Brezhnev stressed, "lies in increased concern about the family, about newlyweds and, above all, about women. After all, everyone knows how difficult it sometimes is to combine the duties of motherhood with active participation in production and social life."<sup>1</sup> In this way, he defined the principal feature of an effective demographic policy--the establishment of the necessary conditions for the successful performance of all major family functions.

Studies of marital and family relationships employ various criteria to classify family functions.<sup>2</sup> There are many classification systems and no single standard. In our opinion, a standard system for the classification of such functions should be based on the fact that the family, as the most important social nucleus, is related to the system of social production by numerous connections.

Two spheres of social production have a decisive effect on the development of human society--the production of the means of existence and the production of the human being. "According to the materialist interpretation, the decisive moment in history," F. Engels wrote, "is, in the final analysis, the production and reproduction of life. But it is of two types. On the one hand, there is the production of the means of existence: food, clothing, shelter and the necessary tools; on the other, there is the production of the human being, the continuation of the race."<sup>3</sup> The members of each family must participate in producing the means of existence. This also applies to the sphere of human production, or to the "production and reproduction of life." The refusal of the family to participate in either of these types of these types of production unavoidably has a negative effect on social development. For this reason, each family must perform two functions: a productive function, connected with participation in producing the means of existence,<sup>4</sup> and a reproductive function--the function of producing the human being.



Families have been increasingly active in the performance of their productive function. Whereas 47.7 percent of the total population was employed in the national economy of the USSR in 1970, the figure was 51.5 percent in 1979.<sup>5</sup> The employment figure for women is rising rapidly. In the last 10 years the number of women workers and employees in the national economy increased by 11.9 million (10.4 million for the men). Since 1970 women have accounted for 51 percent of all workers and employees. In other words, there are more employed women than men.<sup>6</sup>

Families are less active, however, in the production of the human being and the continuation of the race. According to the data of a sample survey, families with one child accounted for 57.4 percent of all families with children under the age of 16 in 1978, families with two children accounted for 31.8 percent, and families with three or more children accounted for 10.8 percent (for kolkhoz families the respective figures were 37.9, 30.2 and 31.9 percent).<sup>7</sup> Each family must have at least two children for the younger generation to replace the older. The figures above indicate that most families are performing their reproductive function on a level falling below society's needs. This negative tendency is compensated for by the large size of some families, and this, along with the low mortality rate, guarantees the expanded reproduction of the population. Society cannot rely on these large families permanently, however, particularly as this kind of family is common only in a few regions. The current preference for small families is a long-term phenomenon and it is unlikely that the situation will improve automatically in the future. A survey conducted in the nation in 1969 indicated that only 31 percent of all women wanted to have three or more children. When women in Moscow and Riga were polled at the end of the 1970's, only 6.2-6.3 percent wanted this many children.<sup>8</sup>

What is the reason for the decreasing size of our families? How can a higher birth rate be promoted? In our opinion, this can be done primarily with the aid of a system of measures to eliminate the negative effect of the family's productive function on its reproductive function. Above all, the successful combination of the duties of motherhood with active participation in production must be guaranteed in line with the directives of the 26th CPSU Congress. The presence of an indisputable connection between female employment in the national economy and the birth rate is attested to by the data in Table 1.

The decree adopted in 1981 by the CPSU Central Committee and USSR Council of Ministers "On Measures To Increase State Aid to Families With Children" will make conditions much easier for working mothers and give women more time to care for infants. The decree envisages, in particular, a partially paid leave for working mothers to care for infants until their first birthday (as well as a supplementary unpaid leave until the child is 18 months old, and in the future until the child's second birthday, with no change in the permanent service record of the mother). Women will be given opportunities to work a part-time day or week, to work according to a flexible schedule and to work in the home. It is also significant that working women with two or more children under 12 will be given 3 extra paid vacation days, priority in the scheduling of annual vacations in the summer season, and up to 14 extra days off without pay to care for their children.

The decree also envisages a considerable increase in financial aid to families with children. First of all, working mothers or mothers attending school full-time will

be paid a grant of 50 rubles upon the birth of their first child and 100 rubles upon the birth of their second and third. Single mothers will also receive a much larger stipend from the state. It would also be difficult to overestimate the significance of measures for the further development of the network of kindergartens and nurseries, day-care centers and groups, Pioneer camps and other child care establishments during the 11th and 12th five-year plans, particularly in regions with a high percentage of working mothers; for the more extensive practice of transfers within regional and departmental kindergarten and nursery networks; for the better manning of nurseries, child care groups and infant care centers with qualified personnel.

The system of measures specified in the decree will certainly play a positive social role in the better combination of both family functions, primarily by their stimulating effect on women who want to have several (three or more) children. But only less than a third of the women in our country, and less than 10 percent in large cities, want this many children. Obviously, the measures envisaged in this decree could change the situation; it seems, however, that measures should also be planned and implemented expressly to create a greater need for children in parents. This is an important human need. Under present conditions, most children are born only when their parents want them.

Table 1

Percentage of Women Among Workers and Employees and Birth Rate  
in Some Union Republics in 1979\*

<u>Locations</u>	<u>Percentage of women in labor force</u>	<u>Birth rate</u>
Nationwide	51	18.2
Latvian SSR	54	13.7
Estonian SSR	54	14.9
Belorussian SSR	53	15.8
RSFSR	52	15.8
Lithuanian SSR	52	15.2
Ukrainian SSR	52	14.7
Uzbek SSR	42	34.4
Turkmen SSR	41	34.9

\* "Narodnoye khozyaystvo SSSR v 1979 g." [The National Economy of the USSR in 1979], Moscow, 1980, pp 39, 392.

Strictly speaking, there is no need for children as such. Each married couple does not experience a need for children in general, but for a particular number of children, for one, two, three, five, etc. The main difficulty lies in explaining why some couples want to have one or two children while others want five or six. The problem becomes simpler if we consider that "for the family, any particular number of children should not be regarded as a goal, but as the means by which parents will satisfy some of their socially determined needs."<sup>9</sup> Married couples want to have as many children as they need to satisfy all of their other needs.

The conditions of family existence, the needs of parents and the role of children as a means of satisfying their parents' needs are changing. As a result, the parents' need for a particular number of children is also changing: Large families are being replaced by small ones. "The group of needs that are partially or completely satisfied by children has changed throughout history and the value of children of various ages has also changed."<sup>10</sup>

What were the factors contributing to the need for large families in, for example, prerevolutionary Russia? It is known that peasant women in Vologda gave birth 6.3 times on the average, Ryazan' women had 7.7 children on the average, Kostroma and Yaroslavl' women had 8, Voronezh women had 8.9, etc.<sup>11</sup> Most demographers point out the high economic value of children for parents during that era. The extremely low standard of living of the laborers caused parents to think of children as a source of extra family income. The expense of training them for labor was minimal. The absence of a reliable system of social insurance and social security and the lack of jobs, which affected mainly adult family members, gave children the function of "insuring" their parents against unemployment, illness and old age. The high birth rate was also "stimulated" by the colossal mortality rate of infants and children.

Today the situation has changed dramatically. The material standard of living has risen immeasurably and the state reliably insures each member of society against illness and old age. This has naturally modified the need for children. Even in republics with a high birth rate the size of families cannot be compared to family size before the revolution. According to the data of the 1979 union census, for example, the average family in the Uzbek and Turkmen SSR's has 5.5 members<sup>12</sup> and, consequently, the average number of children in the family does not exceed 4.

What are the contributing factors now, for example, in the need for a second child? This question cannot be answered in full as yet because the necessary information base has not been established. Even available data indicate, however, that social and psychological factors have replaced economic motives. For example, during a sociological demographic survey of Moscow women with two children, 52.5 percent said that the birth of the second child was connected with the parents' desire to have a child of the opposite gender or to answer the firstborn's request for a brother or sister. Almost 30 percent believed that the decision to have a second child stems from a desire to guarantee the continuation of the race.<sup>13</sup>

These social and psychological factors are now reflected in the preference of most parents for small families. Consequently, steps must be taken to promote the need for a mid-sized family. Measures to change demographic attitudes will be needed in addition to economic stimuli. The preference for small families cannot be overcome if only the "basis" of the family is re-constructed while its "superstructure" remains unchanged. Here we are already dealing with the educational function of the family.

K. Marx and F. Engels stressed that "individuals create one another, both in the physical and in the spiritual sense."<sup>14</sup> Whereas the physical creation of some individuals by others is the process by which the human being is produced when families perform their reproductive function, spiritual production represents another sphere of activity--the production of the consciousness. "The production of ideas,

beliefs, the consciousness...is woven directly into material activity and material contacts, into real life."<sup>15</sup> This means that the production of life and the production of consciousness are inseparable and organically intersupplementary.

Table 2

Birth Rate and Divorce Rate in the USSR  
(per 1,000 inhabitants)\*

<u>Years</u>	<u>Number of births</u>	<u>Number of divorces</u>
1960	24.9	1.3
1970	17.4	2.6
1971	17.8	2.6
1972	17.8	2.6
1973	17.6	2.7
1974	18.0	2.9
1975	18.1	3.1
1976	18.4	3.4
1977	18.1	3.5
1978	18.2	3.5
1979	18.2	3.6

\* "Narodnoye khozyaystvo SSSR v 1979 g.," pp 35-36.

Each Soviet family forms and develops a family consciousness under the definite influence of communist ideology. This ideology, which expresses the wishes and interests of workers, peasants and the intelligentsia, laboring people of all nationalities and ethnic groups, does not suppress family feeling but puts the common consciousness of each family on a scientific basis. The education of parents and the reorientation of their consciousness will also be necessary to create a need for a mid-sized family. There is no question that mass preference for this size family will only be made possible by the establishment of the appropriate material base for the development of a mid-sized family. This will also require the appropriate changes in the public mind. After all, the present preference for small families has become a stereotype for family behavior and has been taking shape for many years. This is now a fairly strong stereotype and it could have a noticeable effect on the demographic behavior of many families even if the appropriate material base for the development of the mid-sized family is established.

When we examine ways of stimulating the birth rate, we must also consider the problem of divorce. The increasing popularity of small families and the rising divorce rate are now being studied by experts in various fields. The reciprocal influence of these processes has been studied little, but there is a connection between the declining birth rate and the rising divorce rate (see Table 2).

The most dramatic postwar decline in the birth rate occurred in the 1960's: from 24.9 percent in 1960 to 17.4 percent in 1970. The divorce rate climbed dramatically, actually doubling, during the same years: from 1.3 to 2.6 percent. It would certainly be a mistake to ignore the definite effect of the entire group of



socioeconomic factors and the age and sex structure of the population on the birth rate. But it would also be a mistake not to consider the rate of marital stability. The facts testify that small families, and certainly families without children, are more vulnerable to the threat of dissolution. In fact, sociologists have even coined the term "small family syndrome." The facts also testify that the high divorce rate is another one of the factors inhibiting the need for children in married couples, especially wives. According to L. Ye. Darskiy, "the heightened probability of dissolution is contributing to a lower level of marital fecundity because women are afraid of being left alone with their children, and married couples do not want to 'bind themselves together' by having many children, given the possibility of divorce."<sup>16</sup> This is why one of the principal ways of stimulating the birth rate consists in divorce prevention, the success of which will depend largely on how effectively the family can develop marital and family relationships.

K. Marx and F. Engels stressed that "the production of life, both one's own by means of labor and the life of others by means of birth, is a dual relationship: On the one hand, it is a natural relationship, and on the other, it is a social relationship."<sup>17</sup> The production of social relations involves all spheres of social production. For example, the production of the means of existence also signifies the production of economic relationships. The production of social consciousness is simultaneously the production of the necessary social relationships: political, ethical, aesthetic, etc. Within the sphere of the production of the human being, the continuation of the race, the population also produces a specific type of relationships--family and marital. When F. Engels studied the evolution of the process by which the human being is produced, it is not surprising that he began his analysis by elucidating the principal categories of marital and family relationships. He said that "the names father, child, brother and sister are not some kind of honorary titles; they denote quite definite and extremely serious reciprocal obligations, and the entire group of these obligations represents an important part of the social order."<sup>18</sup> In the socialist society these family "names" denote extremely serious reciprocal obligations which each family member must fulfill. This is essential to each individual family and to the society as a whole. It is this that largely determines the dynamics of the national birth rate.

In summation, we believe it is important to stress that the family now performs the following functions: the productive and the reproductive, the function of developing needs and the educative function of developing marital and family relationships. All of these functions are interrelated. The declining birth rate and the changing reproductive patterns in the nation are the result of corresponding changes in family activity in other functional spheres, reflected in the increasing professional and social activity of women, changes in the nature of the parents' need for children, the replacement of the traditional large family with the traditional small family and the changing nature of family and marital relationships. A higher birth rate and a preference for large families will only be made possible by an effective demographic policy which makes the appropriate changes in family activity in all functional spheres. The effectiveness of demographic policy will depend largely on the degree to which state aid to families is supplemented by the necessary effort on the part of all parents.

# FOOTNOTES

1. "Materialy XXVI s"yezda KPSS" [Materials of the 26th CPSU Congress], Moscow, 1981, p 54.
2. See, for example: A. G. Kharchev, "Byt i sem'ya v sotsialisticheskom obshchestve" [Family Life and the Family in the Socialist Society], Leningrad, 1968, pp 16-19; E. K. Vasil'yeva, "Sem'ya i yeye funktsii" [The Family and Its Functions], Moscow, 1975, pp 112-126; Z. A. Yankova, "Gorodskaya sem'ya" [The Urban Family], Moscow, 1979, p 27.
3. K. Marx and F. Engels, "Works," 2d ed, vol 21, pp 25-26.
4. The productive function includes: a) the activity of able-bodied family members in any sphere of the national economy; b) the reproduction of the working ability of able-bodied family members and the younger generation. This takes in the management of the household, the elevation of the educational level and enhancement of the vocational skills of family members, the organization of leisure activity, etc.
5. See "Naseleniye SSSR" [The Population of the USSR], Moscow, 1980, p 31.
6. Calculated according to data in "SSSR v tsifrakh v 1980 godu" [Statistical Record of the USSR in 1980], Moscow, 1981, p 159; "Zhenshchiny v SSSR" [Women in the USSR], Moscow, 1981, p 7.
7. "Deti v SSSR" [Children in the USSR], Moscow, 1979, p 9.
8. V. A. Belova, "Chislo detey v sem'ye" [The Number of Children in the Family], Moscow, 1975, pp 103, 109; I. A. Anderson, "Tretiy rebenok" [The Third Child], Riga, 1979, p 22.
9. A. G. Volkov, "The Need To Influence the Birth Rate," in the book: "Rozhdayemost' (problemy izucheniya)" [The Birth Rate (Research Problems)], Moscow, 1976, p 54.
10. V. A. Belova, "Some Aspects of the Study of Reproductive Behavior," in the book: "Rozhdayemost' (problemy izucheniya)," p 96.
11. B. N. Mironov, "The Traditional Demographic Behavior of Peasants in the 19th and Early 20th Centuries," in the book: "Brachnost', rozhdayemost', smertnost' v Rossii i v SSSR" [Marriage, Birth and Mortality Rates in Russia and in the USSR], Moscow, 1977, pp 96-97.
12. "Naseleniye SSSR," p 17.
13. MOSKOVSKAYA PRAVDA, 3 February 1980.
14. K. Marx and F. Engels, Op. cit., vol 3, p 36.
15. Ibid., p 24.

16. L. Ye. Darskiy, "Formirovaniye sem'i. Demografo-statisticheskoye issledovaniye" [The Formation of the Family. A Study of Demographic Statistics], Moscow, 1972, p 145.
17. K. Marx and F. Engels, Op. cit., vol 3, p 28.
18. Ibid., vol 21, p 35.

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